In order to determine HUM values using dried blood spot, the blood spot was punched out into 10 mm discs. The radioimmunoassay was carried out by two antibody method after precipitation with buffer at 4°C for 24 hours. Assayable sensitivity of one disc was 13 ng/ml of serum HUM levels. A significant correlation was found between the values of serum HUM and disc HUM (n = 40 r = 0.997). Interassay and intraassay variability were satisfactory. We found that 1) there was a significant correlation between the HUM levels and the numbers of discs used; 2) the trial to increase the sensitivity of assay by decreasing the amount of labeled HUM and antibody was not successful; 3) delayed addition of labeled HUM did not improve the sensitivity of the assay. Using our method, it is possible to detect the patients with hypersecretion as well as hyposecretion of HUM.

It is well known that prealbumin (PA) carries the thyroid hormone and is closely linked to retinol-binding protein, but serum PA levels are not well known in various clinical states. We developed determination of serum PA by radioimmunoassay (RIA). Serum PA levels in normal males was 29.4 ± 2.6mg/dl (mean ± SD, n=14), in normal females was 24.9 ± 2.6mg/dl (n=17), and in pregnant women was 18.0 ± 2.5mg/dl. Serum PA levels in liver cirrhosis and icteric stage of acute hepatitis was low and was normalized in convalescent stage of acute hepatitis. Nephrotic syndrome showed high serum levels and hemodialysis patients were in normal range. Hyperthyroidism showed low serum levels as compared with hypothyroidism. The means of serum PA levels in cancer patients were low without any relation to primary of cancer. Stomach cancer was 16.8 ± 6.8mg/dl (n=40), large bowel cancer was 17.3 ± 6.7mg/dl (n=15), lung cancer was 17.2 ± 5.2mg/dl (n=11), primary hepatoma was 14.4 ± 4.4mg/dl (n=6) and others was 16.3 ± 6.9mg/dl (n=12). Serum PA levels and CEA levels showed negative correlation. Determination of serum PA levels is available for detecting prognosis of patients with cancer and also for the index of protein synthesis in liver disease.